

Kosova and Albania

**Paediatric Urology, Radiology and Anaesthesiology
Teaching Program**

10th April - 22nd April 2011

Professor Paddy Dewan, Dr Padma Rao, and Dr Colin Gordon

A Project of the Kind Cuts for Kids Foundation, Australia,
the Australian Albanian Community,
the University Hospital, Prishtinë
and
the Qëndra Spitalore Universite Nënë Tereza, Tiranë



Kosova and Albania - 2011

Introduction

Kosova and Albania both have a long, rich history; Kosova having not long survived a war with Serbia; Albania having very recently come out of communism. Therefore, both have challenges in establishing the infrastructure and manpower to ensure adequate care for children needing management of paediatric surgical problems.

A chance meeting in 2009, between John Taip and Paddy Dewan, has made a dream come true. Albanian children have previously come to Melbourne for complex surgery. The Kind Cuts for Kids Foundation has performed similar surgery in developing countries around the world, in which medical staff have wanted further training. Professor Paddy Dewan suggested that a team could go to Albania, a suggestion that had been made in many directions, many times. This time the snowball started to roll. Reg Karafili and Sezar Jakupi became involved, and almost overnight, trips to both Kosova and Albania were organized, involving the specialties of Paediatric Surgery, Anaesthesia and Radiology in both centres.

The Australian-Albanian community has taken up the challenge of ensuring the success of the mission, having raised the bulk of the funds during a fund raising dinner in March. The funds have been administered, and the visit managed, through the Kind Cuts for Kids Foundation.

The trip to Kosovo and Albania was organised with the help of many people but particularly the members of the planning and manpower committees of the Kind Cuts for Kids Foundation, Dr Nexhmi in Prishtinë, and Dr Dritan in Tiranë, and Mr Sezar Jakupi in Melbourne.

The Foundation aims to teach, treat and capacity build have been more than achieved during the two week visit to the Balkans, reached well beyond the performance indicator standard for the Foundation in both countries. Australian medical staff have had the privilege of working with skilled Balkans colleagues who have graciously sort assistance with complex cases, and we have all learnt.



Bleon and his happy family just two days after a six hour operation for a bladder exstrophy

Surgery

In both Kosova and Albania, the head of the Balkans partnership team was a senior member of the Paediatric Surgical Department, assisted by his staff, both surgical, nursing, anaesthesia and radiology. Contribution through the other specialties will be reported under separate headings later in this document.

While surgical clinical care was the primary focus, with over 67 hours of operating during the two weeks, the principle purpose was realised through the participation of 15 different surgical assistants and many others being involved in the audiences during the surgery and lectures. Up to 23 people were present in the theatre at any one time. Seven different nurses scrubbed and many others were present to learn during a total of 19 anaesthetics on 18 different patients, 9 of whom were treated in Kosova.

Twenty six patients were reviewed, indicating the very adequate pre-visit screening process in each country that is also indicated by the complexity of surgery needed. The theatres sessions included a total of 59 procedures during the 19 anaesthetics with many patients requiring long and multiple component operations, 26 of which were performed in Kosova.

In addition to the teaching in theatre, educational ward rounds were conducted on most days, 8 surgical lectures were presented (as well as 4 in the associated specialties), patients were reviewed in preoperative clinics and a research meeting to discuss scientific papers for preparation for publication were explored.



The surgical team and some of the kids

Diagnoses

COPUM 6, anorectal anomaly 4, bladder exstrophy 5, hypospadias 3, non-neuropathic neuropathic bladder 2. There was also a case with a cloacal anomaly, urethral stricture, renal failure, meningomyelocele, hydrocephalus, duplex kidney with ureterocele, strawberry naevus, duplex kidney with ureterovesical fistula, undescended testicle, inguinal hernia or labial adhesions. Many patients had more than one diagnosis.

Operations

Anorectoplasty 5, Rectourethral fistula closure 2, Ostotomy 4, Cystoscopy 8, Cystolithotomy 2, COPUM fulguration 2, Ureteroureterostomy 3, Appendix Mitrofanoff 2, Ureteric reimplant 2, Urodynamics 2. One of each of anorectal muscle plication, wound revision, closure of ureterostomy, bladder neck transection, insertion of DJ stent, excision of buttock cyst, excision of bladder polyps, bladder exstrophy closure, inguinal herniotomy, orchidopexy, percutaneous pyelogram, vesicostomy, epispadias urethroplasty, urethral dilatation, ureterostomy closure, ureterocele excision, partial ureterectomy, penile skin graft, forearm skin harvest, ulaanbataar hypospadias graft, omphaloplasty, Meckel's diverticulum excision, ileocaecocystoplasty, distal hypospadias redo.

Listing of the operations does not tell the story of the lives of children and families that have had to deal with major anomalies. The extent of the surgery is highlighted by an average length of operation of 3.5 hours, on 3 girls and 15 boys, with the average age at the time of surgery being 5.7 years.

Case studies

Irsilda had turned 11 years four days before she was seen in the outpatients. The mother brought a copy of a photograph taken in Melbourne (left) that reminded Professor Paddy Dewan that he had been previously involved in surgery on the same girl with a complex anomaly of her bowel. The initial surgery was performed in Melbourne in 2002; surgery that was delayed at the time as the child had developed a urine infection on the journey from Kosova.





Meriton, is a 14 year old boy who had never had his anorectal anomaly repaired. He should have had the operation in the first year of life, but he was born at a time when it was not easy for families to have access to the surgical solution that therefore became part of the teaching visit to Kosova. Meriton had lived his life with a colostomy. Had he been born in Australia he would have had the definitive surgery performed as a baby.



Granit was born with bladder exstrophy meaning that the inner bladder is exposed to the surface, for which he had previous surgery, including pelvic fractures. Time constraints resulted in him not being able to have surgery in Prishtinë, but with the cooperation between the centres, he was transferred to have his operation in Tiranë. A significant aspect of the surgical procedure was the education of the Albanian orthopaedic team in the conduct of the pelvic osteotomy. The bladder and the pelvis were able to be successfully closed. He was 18 months old and had a six hour operation. He is pictured with his mother (above). The radiograph shows the front of his pelvis to be wide open, as expected as part of the anomaly.



Surgical lessons

There were many surgical teaching points that benefited both the patients and the surgeons, including the techniques of:

1. Percutaneous retrograde pyelogram.
2. Urethral dilatation over guidewire.
3. Pelvic osteotomies for bladder exstrophy closure.
4. Appendix Mitrofanoff.
5. Urodynamics with simple equipment.
6. Ureteric catheter ablation of COPUM.
7. Tunnelled distal urethroplasty
8. Ureteroureterostomy.

The surgical lectures covered five topics in 4 lectures, which were presented twice, once at a Kosova symposium attended by the Minister for Health, the other being at the Mother Teresa Hospital symposium in Tiranë; the topics were:

1. Vesicoureteric reflux and catheterless ureteric reimplants.
2. Duplex systems and ureteroceles.
3. Congenital obstructive posterior urethral obstruction (COPUM).
4. Neuropathic bladder and augmentation.
5. Anorectal anomalies and redo surgery.

Anaesthesia

In Kosovo, the anaesthetic staff involved were Dr Antigona, the head of Paediatric Anaesthesia, and Dr Islam, both of whom are well trained and competent. However, their command of English was poor. The anaesthetic nurses, as in many other countries, draw up the drugs, insert the IV cannulae and record the anaesthetic details on the anaesthetic chart.

Features of the anaesthetic machines that could improve is to eliminate scavenging of the exhaled gases, the gas bottles do not meet international standards for the correct colour code for oxygen, there are no piped gases and the anaesthetic machines need replacing. The essential vapouriser component is only available in 6 of the hospitals' 22 theatres, resulting in more expensive drugs being needed. Syringe pumps and anaesthetic bags are in need of upgrade, as for suction catheters and pumps. There is also a need to service the drugs in the anaesthetic machines daily and to ensure that syringes and their contents as managed to international best practice.

There was a lack of staff to be with the patient after they were taken to the recovery area, resulting in the anaesthetic staff recovering the patients, which usually is carried out in other centres in a transition "recovery" ward with appropriate nursing staff. Importantly, the Kosova anaesthetic documentation and procedure for patient identification was less rigorous than in Australia, but circumvented in our cases.

Some equipment was in short supply, including a shortage of hypodermic needles. There were no volumetric giving sets, which are important for the younger patients. There is no warming device and no readily available non-sterile gloves.

Analgesic management could be improved with liquid paracetamol, codeine and morphine being made more readily available. The introduction of the use of the caudal anaesthetic will assist in the care of children having urologic surgery. This was a technique that was taught to the local team.

In Albania, Dr Gordon worked with Dr Amarold Balliu and Dr Spiro Sila, are well trained, competent and enthusiastic anaesthetists. Unfortunately, language was a barrier. Some of the problems were similar to those seen in Kosova, which are aspects that might be addressed by assistance with further funding and education, including:

1. Improved anaesthetic suction.
2. Short anaesthetic circuits.
3. A lack of antihypoxia device.
4. No scavenging for exhaled gases.
5. Oxygen sensor expired.
6. No monitoring of volatile agents.
7. Oxygen pipeline not colour coded.
8. Laryngoscopes in short supply.
9. No volumetric giving sets.
10. No recovery ward.
11. Documentation not to Australian standard.
12. No patient warming device.
13. Local anaesthetic in short supply

The very positive features of the theatre was the very clean state and the presence of a new operating table. The issues related to other supplies and pain management were similar to Kosova, noting, however, that the children appeared remarkably pain free postoperatively.

Anaesthetic Lesson

As for surgery and radiology there were many lessons taught in the operating theatre and at a lectures given on 15th April and 22nd April, including:

1. Minimize the use of 5% glucose solutions.
2. Caudal anaesthesia.
3. Limb positioning.
4. Propofol change frequency.

Radiology

Introduction

In many centres across the world paediatric radiology has become recognised as a separate subspecialty because children differ from adults in the spectrum of radiological abnormalities in different disease entities. Therefore, radiology provides vital support to surgery with many surgical procedures not able to be performed without prior imaging. The inclusion of a paediatric radiologist in the KCFK trips has several important aims:

1. To perform and/or oversee the radiological investigations needed on the patients selected for surgery.
2. To educate local radiologists on the specifics of performing radiological procedures on children. This is particularly relevant as regards the appropriateness of certain investigations, the way the procedures are performed and in education about the potential effects of radiation exposure in children.
3. To assess the equipment and processes currently in place, particularly as regards to their suitability for paediatric applications, and to make recommendations on future changes and equipment needed.

Kosova

The hospital in Prishtinë is a large multifaculty hospital with approximately 3000 beds. Dr. Arben Kutllovci is the head of the Department and are of the senior trainees Dr. Ardian Bigaku.

Each day began with a meeting of the paediatric surgeons to discuss the cases to be operated on that day. The clinical history and examination were presented as powerpoint presentations and the pre operative radiology was discussed. This was the ideal opportunity to educate the surgeons about paediatric radiology. These meetings were also attended by visiting paediatric surgeons from other institutions such as Graz, Austria and Croatia. This was followed by a visit to see the post operative patients.



Equipment

The Radiology department is split into two separate sites within the hospital campus and is well equipped. The hospital has had an equipment upgrade in the last year and is surprisingly well equipped. The main department houses computed tomography (CT), fluoroscopy, plain film reporting, nuclear medicine (NM) and ultrasound (US) with magnetic resonance imaging (MRI) and a further 64 slice CT scanner housed separately in the new Oncology department.

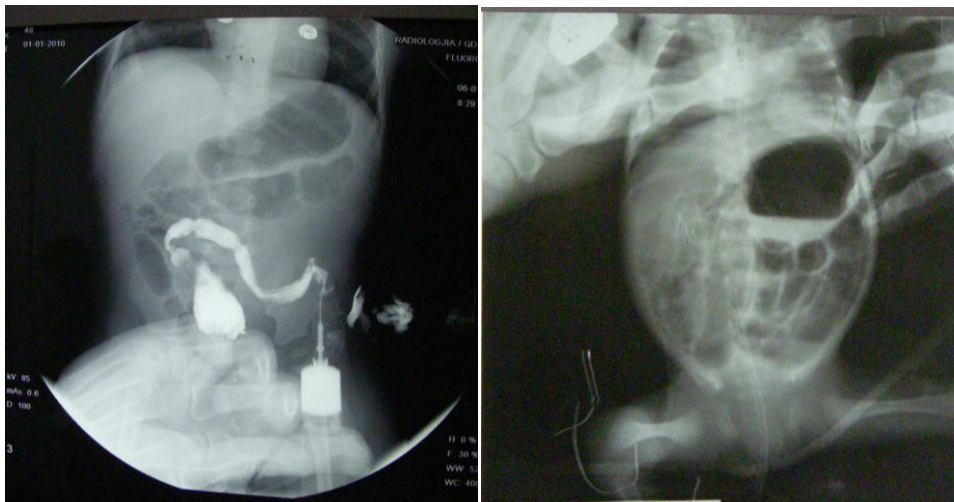
Kosova and Albania - 2011

Apart from US, all images are displayed on PACS and reported off screen. The PACS system is manufactured in Croatia and functions well. The PACS is linked to a Radiology Information System (RIS) and reports are typed on to the computer by the reporting radiologists, similar to Australian hospitals.

Staff radiologists routinely work between the hours of 8.00am and 1.00pm, which does limit access to investigation.

The Radiology specialty training scheme is four years. Often, there is no permanent public hospital job prospect at the end of training but there are options within the private sector. Paediatric radiology is not recognised as a separate subspecialty and thus trainees do not receive separate dedicated paediatric radiology training and there are no dedicated subspecialty paediatric radiologists within Kosova. Additionally, separate subspecialty training in any area is not yet supported in Kosova.

Discussion with the radiologists, on the issue of radiation protection, suggests that the concept of radiation protection in children could be further developed both in the hospital radiology department and private practice. For example, there is currently high CT use in children, lack of coning for xrays and fluoroscopy as shown in the examples below.



A contrast study, and an abdominal radiograph, demonstrating a lack of coning, resulting in irradiation of the lung base and the legs, plus the hand of the person instilling the contrast or holding the baby.

An example of a radiation dose problem was a patient who underwent a ureteroureterostomy and ureteric reimplant by the KCFK team who underwent a triple phase CT of the abdomen and pelvis during her workup investigations which would have imparted a huge and unnecessary dose of radiation to the patient. A careful ultrasound study and a limited intravenous urogram would have provided the same information at a significantly reduced radiation dose and cost. One of the reasons given for the lack of streamlining is that the workload or throughput is too high for individual radiologists to be able to spend time instituting such measures. This is obviously, an area where education would help implement more effective radiation protection measures. Parents and carers are also sometimes exposed to unnecessary radiation as they are not given appropriate lead protection when they remain in the CT or fluoroscopy rooms with their child who is undergoing a procedure.

Kosova and Albania - 2011

All of the patients operated on in Prishtinë had most, if not all, of their preoperative imaging performed prior to the KCFK team arriving. This was usually performed in outside private radiology institutions where the resources and equipment are substantially better. It appears to be very difficult for clinicians to obtain radiological studies on their patients either as inpatients or urgently; the lists are full and patients have to provide their own equipment such as gloves, catheters and contrast. Often, the relevant equipment such as tubing and connectors is not available making it difficult to perform the study. Thus, many patients resort to having studies performed elsewhere at private practices or abroad in other countries. This greatly limits the ability of the requesting clinician to have involvement in the study, or for continuity of care if different studies on one patient are performed at different centres.

Unfortunately, a shortage of cleaning fluids and sterile gloves means that aseptic techniques cannot be enforced placing patients, and staff, at risk of infection. Also, patient comforts were lacking; the xray and fluoroscopy tables are hard and lack both cleanable mattresses and clean cover sheets means patients are exposed and lack dignity.

Albania

The Mother Teresa Hospital is a large 1200 bed children's hospital, with a radiology department headed by Dr. Kramer. The contact radiologists for the visit were Dr. Durim Cela and Dr. Besa Hidri. A number of studies were performed as part of the KCFK's visit.

Equipment

The fluoroscopy was disadvantaged by having no image store capacity and a lack of comforts in the screening room. The Toshiba Powervision 6000 ultrasound machine was limited by the provision of thermographic images only. The CT scanner lacked the ability to print images, with reports being generated from the consul. There was no PACS system and reports were hand written.

As for Kosova the office hours were until 1.00pm. The three radiologists who work in the Radiology department are all either full or part time paediatric radiologists. Although there is no dedicated paediatric radiology fellowship in Albania itself, the radiologists have all spent variable amounts of time in centres overseas, such as USA and UK. In addition, they regularly try and attend Radiology conferences, such as the European Society of Paediatric Radiology or the European Congress of Radiology. Thus, there is a high level of knowledge and understanding which facilitated excellent clinical and academic interchanges between the radiologists and Dr Rao. There were many case discussions, plus interaction about differences between Melbourne and Albanian techniques and procedures.

Kosova and Albania - 2011

The Children's Hospital in Tiranë is a teaching hospital and is incorporated into the radiology training scheme. Radiology residents have a paediatric radiology attachment for periods of 8 weeks at a time. However, the main bulk of work is still performed by the staff radiologists, such as reporting of studies and US with the resident observing.

As in Kosova, the radiology training scheme is four years long. Interest was expressed by a current radiology resident applying for and completing the paediatric radiology fellowship at the Royal Children's Hospital, Melbourne at the appropriate time in her training. In conjunction with the local radiologists, a number of investigations were performed on the patients reviewed by the KCFK team.

The radiologists were knowledgeable about the hazards of radiation exposure. However, their ability to optimise conditions varied between the radiologists and was limited by the equipment. For example, the fluoroscopy machine was continuous not pulsed fluoroscopy and there were no image store facilities only exposures. The department had only one compatible xray cassette which caused a significant time delay if relied upon. This resulted in excessive inadvertent use of fluoroscopic screening of patients.



Patients undergoing procedures during which they lay on a hard table and for parents there are insufficient lead aprons for their protection.

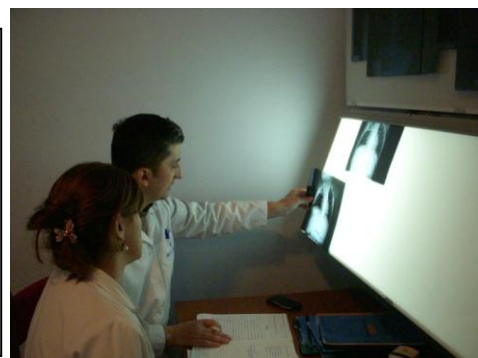


Various points that were highlighted as investigations were being undertaken were:

1. Checking of suitability for use of contrast medium.
2. Sterility.
3. Cross contamination.
4. Cleaning between procedures.
5. Excessive exposure of patients to radiation.



Staff radiologist, Dr. Durim Cela, drawing up contrast for a cystogram in fluoroscopy room (left) and reporting xrays with a radiology resident.



Donations and Donors

Donations were received from Bard Urology, Ansell, Johnson and Johnson, St John of God. The most important and expensive items, the suture material, was made available by a \$5000 donation by SMEC and the remainder of the funds for the visit were provided by a dinner held amongst the Albanian community in Melbourne. The hospital departments generously supplied transport and most of the meals, and Qantas enabled the donations to be taken free of charge.

The donations included:

1. DB ring retractor	- 1	8. Silicone stents	- 10
2. Scissors and Forceps	- 7	9. Sterile gloves - boxes	- 2
3. Suture material - boxes	- 30	10. Diathermy tips	- 20
4. Silicone urethral catheters	- 40	11. Diathermy handles	- 20
5. Melacot catheters	- 15	12. Cook peel-away sheaths	- 4
6. Feeding tubes	- 10	13. Urine drainage bags	- 30
7. Urethral dilators	- 8	14. Scapel blades - boxes	- 2



Conclusion

Children are the prime focus of the Kind Cuts for Kids Foundation, but not just the children on whom we perform surgery, anaesthesia and radiology, but the children who will benefit in the future from the education of the medical staff in the countries we visit. There have been many children benefitted directly by the hard work of many people before and during the visits to Kosova and Albania. Without doubt, there will be hundreds more gain from the interchange between the Australian and Balkans surgeons, anaesthetist and radiologists.

Recommendations

Paediatric Surgery

1. The Kind Cuts for Kids Foundation should conduct further training visits related to anorectal anomaly and complex urology, particularly related to bladder enlargement surgery options.
2. Research papers to be completed in collaboration with Kosova surgeons.
3. A new operating table should be purchased for the Paediatric Surgical theatre in Kosova.
4. Consumables should be provided during subsequent visits.

Radiology

1. Paediatric radiology subspecialty training should be enhanced.
2. Education in radiation protection and sterility should improved.
3. Paediatric probes for the ultrasound machine should be purchased.
4. The purchase of more lead protection gowns would assist.
5. Internet access to relevant Radiology journals.
6. Communications between radiologists and clinicians could be maximised by regular clinicoradiological meetings.
7. In Kosova, the US machine should be upgraded to enable images to be viewed on PACS.
8. In Albania, an update of equipment is required, including an US with paediatric probes, and CT and fluoroscopy with digital image store facilities.

Anaesthesia

1. Patient identification processes need improvement.
2. Documentation of anaesthesia needs to be more robust.
3. Caudal anaesthesia should be used more proactively.
4. Glucose containing solutions should be used more cautiously.
5. Future Kind Cuts visits should address the need to Albanian/English collaboration.